

CLAIMS:

1. A computer system for managing data exchanges among a plurality of network nodes comprising:

a managed packet backbone server (MPBS);

5 at least one Customer Premises Equipment (CPE) node communicable with the managed packet backbone server (MPBS); and

at least one Application Service Provider (ASP) node communicable with the managed packet backbone server (MPBS),

wherein

the managed packet backbone server (MPBS) manages transactions among said at least one Customer Premises Equipment (CPE) node and said at least one Application Service Provider (ASP) node.

2. The computer system of claim 1 wherein the at least one Customer Premises Equipment (CPE) node registers with the managed packet backbone server (MPBS).

3. The computer system of claim 2 wherein the at least one Application Service Provider (ASP) node registers with the managed packet backbone server (MPBS).

4. The computer system of claim 3 wherein the managed packet backbone server (MPBS) issues an authentication key to the at least one Customer Premises Equipment (CPE) node it registers.

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node to establish a session with the at least one Application Service Provider (ASP) node, the managed packet backbone server (MPBS):

5        verifies that the Customer Premises Equipment (CPE) node has a valid authentication key,  
         sends a session request to the Application Service Provider (ASP) node,  
         receives a session token from the Application Service Provider (ASP) node, and  
10        sends the session token to the Customer Premises Equipment (CPE) node.

11. The computer system of claim 10 wherein one of the at least one Customer Premises Equipment (CPE) nodes initiates  
15        a session with one of the at least one Application Service Provider (ASP) nodes by sending a session request to one of the at least one Application Service Provider (ASP) nodes including the session token obtained from the managed packet backbone server (MPBS).

20        12. The computer system of claim 11 wherein one of the at least one Application Service Provider (ASP) nodes verifies a received session token and establishes a session with one of the at least one Customer Premises Equipment (CPE) nodes  
25        if the session token is valid.

30        13. The computer system of claim 12 wherein one of the at least one Customer Premises Equipment (CPE) nodes sends a session initiation event message to the managed packet backbone server (MPBS) upon establishment of a session with

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18. The computer system of claim 16 wherein the managed packet backbone server (MPBS) bills an account associated

with one of the at least one the Application Service  
Provider (ASP) nodes for the session.

19. A managed packet backbone server (MPBS) for managing  
5 data exchanges among a plurality of network nodes  
comprising:

a registration component responsive to said plurality of  
network nodes, for:

receiving registration requests from the network  
10 nodes;

obtaining and storing profile information  
pertaining to each network node; and

providing an authentication key to each network  
node,

15 a session establishment component responsive to said  
plurality of network nodes, for:

receiving a session request message from a first  
network node that wishes to establish a session with a  
second network node, said session request message  
20 including the authentication key associated with the  
first network node;

verifying the validity of the authentication key  
associated with the first network node;

25 sending a session request message to the second  
network node;

receiving a session token from the second network  
node; and

sending the session token to the first network  
node, and

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a session reporting component responsive to said plurality of network nodes, for:

receiving packet metering data pertaining to the amount and type of data exchanged over a managed packet backbone network during a session between two network nodes; and

calculating a fee based on the packet metering data.

20. A Customer Premises Equipment (CPE) node comprising: a registration component responsive to a server node, for:

sending a registration request to the server node; and

receiving an authentication key from the server node,

a session establishment component responsive to a server node, for:

sending a session request message to the server node, said session request message including the authentication key and the address of a network node that the Customer Premises Equipment (CPE) node wishes to establish a session with;

receiving a session token from the server node; and

sending a session request message to the network node that the Customer Premises Equipment (CPE) node wishes to establish a session with, said session request message including the session token, and

a session reporting component responsive to a server node, for:

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- and

a session establishment component responsive to a server node, for:

receiving a session token from a network node that

22. A Customer Premises Equipment (CPE) node comprising:  
a network interface that receives and distributes an  
integrated multi-media signal;

a memory that holds software applications resident on said node and receives and stores data.

an applications processing engine that executes  
ware applications resident on said node; and

a memory that holds software applications resident on said node and receives and stores data.

24. A computer program product for managing data exchanges among a plurality of network nodes, the computer program product having a medium with a computer program embodied thereon, the computer program product comprising:

computer program code for receiving registration requests from network nodes;

computer program code for obtaining and storing profile information pertaining to each network node;

computer program code for providing an authentication key to each network node;

computer program code for receiving a session request message from a first network node that wishes to establish a session with a second network node, said session request message including the first network node's authentication key;

computer program code for verifying the validity of the first network node's authentication key;

computer program code for sending a session request message to the second network node;

computer program code for receiving a session token from the second network node;

computer program code for sending the session token to the first network node;

computer program code for receiving packet metering data pertaining to the amount and type of data exchanged over a managed packet backbone network during a session between two network nodes; and



computer program code for calculating a fee using the packet metering data.

25. A computer program product for exchanging data among a plurality of network nodes, the computer program product having a medium with a computer program embodied thereon, the computer program product comprising:

computer program code for sending a registration request from a first network node to a server node; and

computer program code for receiving in the first network node an authentication key from the server node;

computer program code for sending a session request message from the first network node to the server node, said session request message including the authentication key and the address of a second network node that the first network node wishes to establish a session with;

computer program code for receiving in the first network node a session token from the server node;

computer program code for sending a session request message from the first network node to the second network node, said session request message including the session token; and

computer program code for sending, from the first network node, data to the server pertaining to the amount and type of data exchanged over the managed packet backbone network during the session.

26. A computer program product for exchanging data among a plurality of network nodes, the computer program product



32. A computer readable data signal embodied in a transmission medium comprising:

- a code segment comprising bandwidth information;
- a code segment comprising network interface information;

a code segment comprising address information; and  
a code segment comprising subscriber profile  
information.

5 33. A computer readable data signal embodied in a  
transmission medium comprising:

a code segment comprising information pertaining to  
the number of data packets exchanged in a session between  
two network nodes; and

10 a code segment comprising information pertaining to  
the type of data packets exchanged in the session.

34. A residential access node (RAN) comprising:

15 a hardware platform for interfacing peripheral  
equipment with a packet data network;

a software platform including a plurality of  
application programming interfaces; and

20 a RAN protocol for managing communications among a  
plurality of residential access nodes.

35. The residential access node of claim 34 wherein said  
hardware platform comprises:

network interface means;

storage means; and

25 an applications processing engine.

36. The residential access node of claim 34 wherein said  
software platform resides within said applications  
processing engine and comprises:

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